

# **Southwest Florida Road Hot Spots, 2.0**

**Based on Documented Florida  
Panther Vehicle Mortalities and  
Injuries as of December 31, 2019**

## **Transportation SubTeam Report**

**to**

**Florida Panther Recovery  
Implementation Core Team**

**June 2020**

# METHODOLOGY

- Buffered all roads by 200 meters in ArcGIS
- Created a 500-meter<sup>1</sup> buffer around each panther-vehicle collision (deaths and injuries)
- Clipped the portion of the road buffers that fell within the 500-meter<sup>2</sup> buffer around each collision site
- Combined overlapping segments into a single segment
- Joined collision data to combined road segments
- Created “count” field

Categories of severity are based solely on Florida panther-vehicle collisions. Final shapefile is a collection of road segments containing separate panther-vehicle collision sites within 500 meters of each other. Road segments vary in length and have an associated count field reporting how many collisions occurred in each segment—

Hot Spot categories (Count Fields):

**Red 9+ collisions**   **Orange 6-8 collisions**   **Green 3-5 collisions**   **Blue 1-2 collisions**

The Subteam exempted hot spots from the final map in certain cases where collisions had occurred prior to installation of crossings/fencing. Hot spots on I-75/Alligator Alley have been removed from the map and table since the nine miles of fencing between the Naples Toll Booth and Faka-Union Canal, as well as terrestrial wildlife ledges under the Faka-Union and Miller canal bridges were completed in July 2017. These measures are expected to reduce panther-vehicle collisions in this area. Efforts to improve connectivity on the western end of this segment continue.

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<sup>1</sup> Previous versions of this report utilized 1km buffers.

<sup>2</sup> Previous versions of this report utilized 1km buffers.

If hot spots were not adequately alleviated by mitigation measures currently in place (as indicated by an \* asterisk), the Subteam included these road segments in the final map (e.g., segments of CR846 and SR29).

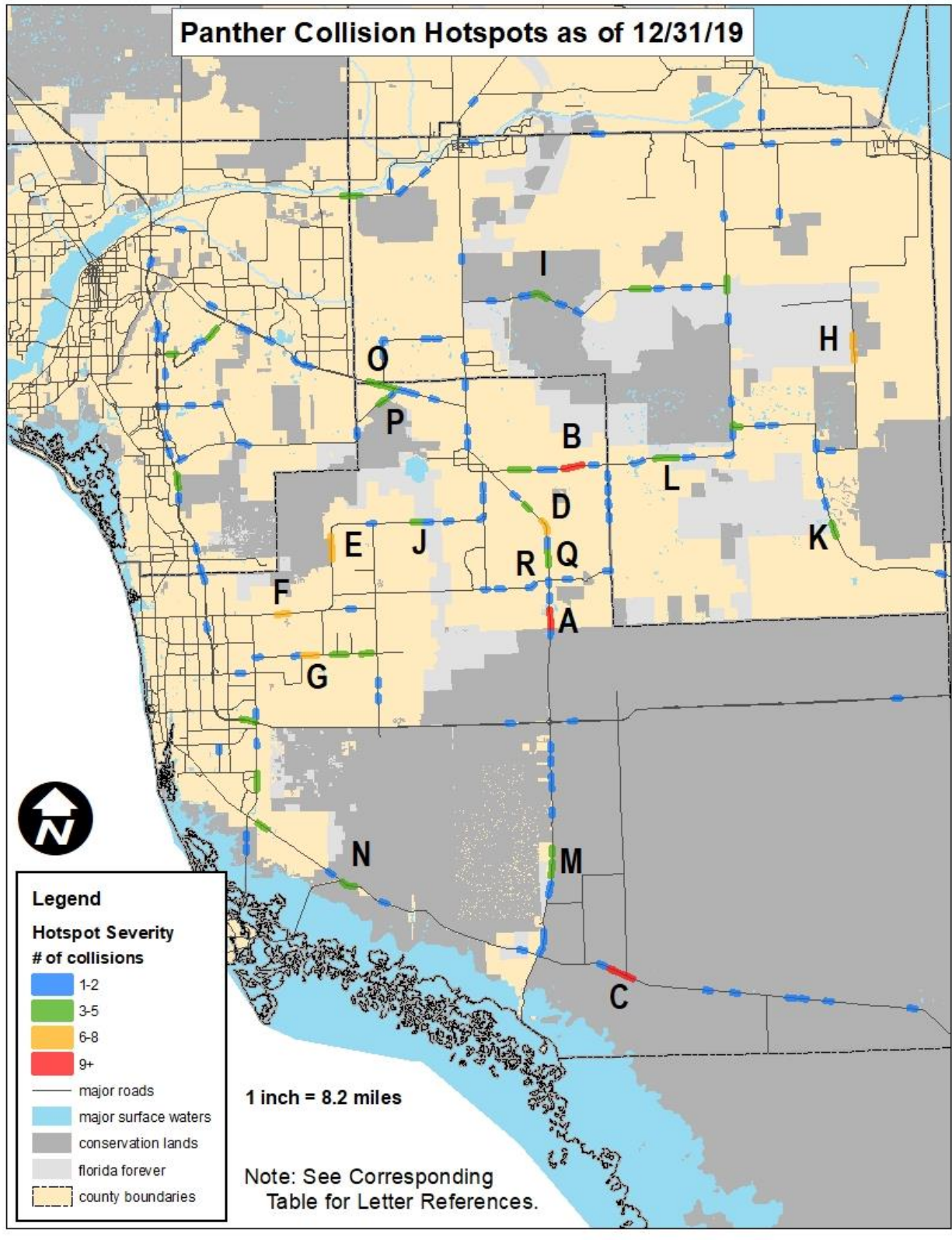
## NOTICE

The Transportation SubTeam is working to identify potential funding sources at the local, state, and federal level.

This is a living document. When amended periodically with additional vehicular deaths and injuries, the level of severity of road segments may increase. For this 2019 update, our methodology varied slightly from previous versions of this report.

Severity may not necessarily dictate order in which crossings/fencing or other features are installed. Additional information, such as telemetry, land cover, and land ownership, shall also be considered when determining the placement of crossing features. The Florida Department of Transportation's (FDOT) [2018 Wildlife Crossings Guidelines](#) should be consulted.

# Panther Collision Hotspots as of 12/31/19



Map Location	Road Segment	Deaths	Comments
A	SR29 south of CR858 to Florida Panther NWR, Collier County	<b>Red</b>	<ul style="list-style-type: none"> <li>– May have cooperating landowners, within proposed Eastern Collier HCP area</li> <li>– FDOT PD&amp;E (see Project Status page)</li> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>
B	CR846 east of Immokalee, Collier County	<b>Red*</b>	<ul style="list-style-type: none"> <li>– Cooperating landowner, Barron Collier, within proposed Eastern Collier HCP area</li> <li>– CityGate wildlife crossing construction completed in November 2011</li> <li>– Certain Collier County proposed bridge replacements include ledges, however, as designed, they do not have the necessary clearance height to accommodate panthers, rather only small to meso-sized species</li> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>
C	US41, Turner River, BCNP, Collier County	<b>Red*</b>	<ul style="list-style-type: none"> <li>– RADS study completed and FDOT funding proposal for improvements under consideration</li> <li>– Existing nighttime Slow Speed Zone, 45 mph (Day = 60 mph)</li> <li>– <a href="#">2016 Report Assessing the Effectiveness and Reliability of the Roadside Animal Detection System on US Highway 41 near the Turner River in Collier County</a></li> </ul>
D	SR29 north of CR858, Collier County	<b>Orange</b>	<ul style="list-style-type: none"> <li>– Cooperating landowners at Owl Hammock Curve south of town of Immokalee</li> <li>– Collier Enterprises &amp; King Ranch, within proposed Eastern Collier HCP area</li> <li>– FDOT PD&amp;E (see Project Status page)</li> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>
E	CR846 (N-S), Collier County	<b>Orange</b>	<ul style="list-style-type: none"> <li>– Collier County may reroute road eliminating curve</li> <li>– Conservation lands exist on the west side (CREW)</li> <li>– The 846 Land Trust owns property (2,787 acres) on the east side and have submitted plans for a proposed 2,000-acre village at this location, but they will maintain approximately 500 acres of land in conservation that stretches from Immokalee Road to the Golden Gate Main Canal on the north side of the parcel</li> </ul>
F	CR846 west of CR858, Near Twin Eagles, Collier County	<b>Orange</b>	<ul style="list-style-type: none"> <li>– Twin Eagles wildlife crossing built in 2004 located about 400 m east of hot spot, has no fencing</li> <li>– Many side streets and private lands severely constrain opportunities for crossings and fencing</li> <li>– Nighttime speed restrictions and flashing light or animated panther crossing signs should be explored</li> </ul>

**HOT SPOTS**   **Red 9+ collisions**   **Orange 6-8 collision**   **Green 3-5 collisions**   **Blue 1-2 collisions**   **\*Some measures completed**

G	CR876 east of 13th St, Collier County	Orange	<ul style="list-style-type: none"> <li>– Golden Gate Boulevard between 13th St and Wilson Blvd in North Golden Gate Estates</li> <li>– This segment is within a large platted area of sparsely developed single-family lots juxtaposed with unprotected remnant forested patches and corridors that makes conserving panther habitat connectivity and creating safe road crossings a challenge</li> <li>– Nighttime speed restrictions and flashing light or animated panther crossing signs should be explored</li> <li>– Driver education and public outreach programs are needed</li> </ul>
H	CR835, Hendry County	Orange	<ul style="list-style-type: none"> <li>– Nighttime speed restrictions, signage, and potentially additional measures should be explored</li> </ul>
I	CR832, Keri Road, Hendry County	Green*	<ul style="list-style-type: none"> <li>– Crosses OK Slough public conservation lands network</li> <li>– Existing nighttime Slow Speed Zone 45 mph (Day = 55mph),</li> <li>– Recommendations for reducing panther-vehicle collisions and improving road permeability for wildlife can be found in the <a href="#">Keri Road and Corkscrew Road Study</a> report</li> </ul>
J	CR846, Camp Keais Strand, Collier County	Green	<ul style="list-style-type: none"> <li>– This hot spot lies to the west of the primary flowway of Camp Keais Strand. The 2006 Wildlife Movement study identified a need for crossings on either side of the flowway</li> <li>– An experimental culvert crossing was built in 2013 to the east side of the flowway (within the adjacent blue hotspot)</li> <li>– Even with limited fencing for the crossing, the adjacent blue hot spot has seen a reduction in panther mortality (as both the adjacent blue segment and this green segment were a single green segment in prior model runs)</li> <li>– Within this green hot spot, there is no crossing; panther collisions continue to occur</li> <li>– May have cooperating landowners, within proposed Eastern Collier HCP area</li> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>
K	CR833 at CR 832, Aka McDaniel Ranch, Hendry County	Green	<ul style="list-style-type: none"> <li>– May have cooperating landowner, FPL Energy</li> </ul>
L	CR846 (Crow's Nest Hammock), Hendry County	Green	<ul style="list-style-type: none"> <li>– May have cooperating landowner, within King Ranch Sector Plan area</li> </ul>

**HOT SPOTS**   **Red 9+ collisions**   **Orange 6-8 collision**   **Green 3-5 collisions**   **Blue 1-2 collisions**   **\*Some measures completed**

M	SR29 south of I-75, Collier County	Green*	<ul style="list-style-type: none"> <li>– This road segment actually contains 2 green hot spots that are separated by less than 1/3 of a mile</li> <li>– Conservation lands exist on both sides (separated by several small private outparcels along the western road frontage)</li> <li>– One existing crossing is located within a blue hot spot south of this segment near Jerome and another existing crossing is located just north of this segment</li> <li>– These segments lie within a 2.45 mile gap between the two existing wildlife crossing fences</li> <li>– The privately owned outparcels within this segment could make it problematic to use crossing structures to address panther collisions</li> <li>– Existing nighttime Slow Speed Zones, 45 mph (Day = 60mph) only on 0.7 miles of the southernmost portion of the southern green segment</li> </ul>
N	US41, Collier-Seminole Park, Collier County	Green*	<ul style="list-style-type: none"> <li>– Three existing low-level bridges are located within this hot spot</li> <li>– Hot spot lies +/- 1 mile east of crossing culverts proposed as a part of the Picayune Strand Restoration Project</li> <li>– Conservation lands on both sides of US 41</li> <li>– Existing nighttime Slow Speed Zone, 45 mph (Day = 60 mph)</li> </ul>
O	SR82 Hendry County to Gator Slough, Collier County	Green	<ul style="list-style-type: none"> <li>– FDOT planning wildlife crossing features at Under Canal (west of Corkscrew Road) and Panther Creek (east of Corkscrew Road) bridge replacements</li> <li>– Cooperating landowners, Alico and King Ranch</li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>
P	CR850, Corkscrew Road, Lee/Collier line	Green	<ul style="list-style-type: none"> <li>– Collier County managed road</li> <li>– Private lands (groves) on west side and CREW public lands on east side</li> <li>– The segment is within a proposed wildlife corridor identified in the proposed Eastern Collier HCP that would connect to the proposed under canal bridge replacement on SR 82</li> <li>– This hot spot is documented in the <a href="#">Keri Road and Corkscrew Road Study</a> Report and corresponds to a proposed culvert replacement/wildlife crossing to accommodate panthers</li> </ul>
Q	CR858 east of SR29	Blue	<ul style="list-style-type: none"> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Committee</a></li> </ul>
R	CR858 west of SR29, Summerland Swamp, Collier County	Blue	<ul style="list-style-type: none"> <li>– May have cooperating landowners, within proposed Eastern Collier HCP area</li> <li>– <a href="#">2006 Eastern Collier Wildlife Movement Study</a></li> <li>– <a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a></li> </ul>

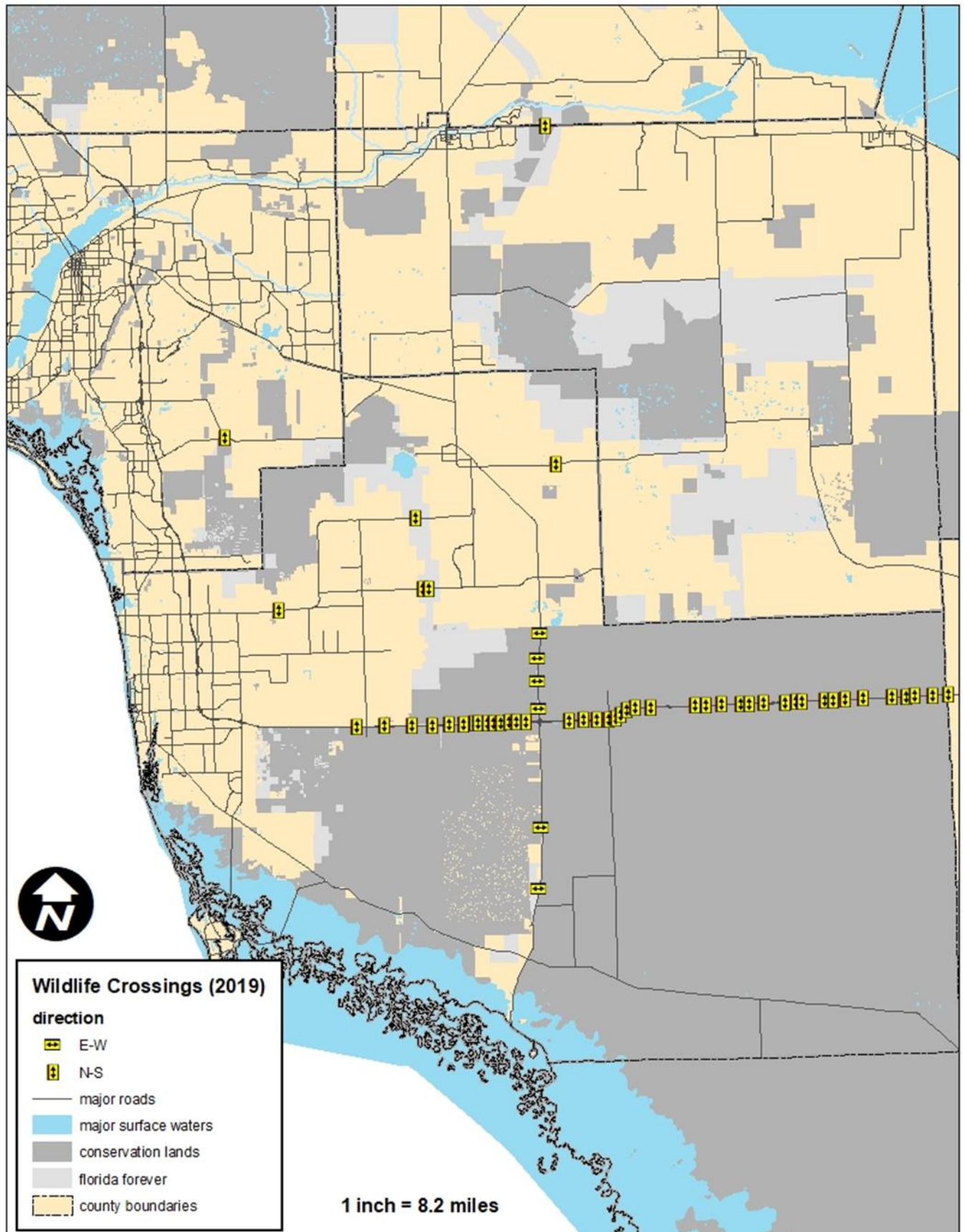


## **ADDITIONAL HOT SPOT SEGMENTS**

The Subteam's focus was to highlight details on hot spot segments associated with current improvement opportunities. Yet, it is noteworthy to acknowledge that additional segments with 3-5 and 1-2 recorded collisions exist that were not detailed in the report. All collision hot spots will continue to be monitored, and if additional improvement opportunities arise, the report will be modified. Current hot spot status is subject to change with future collisions and/or further evaluation of telemetry, land cover, and other factors. Some hot spot segments currently exhibiting lower severity in impacts to panthers may be in important locations because they intersect with existing or proposed regional habitat linkages.



## Existing Wildlife Crossing Locations



# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"> <li>– SR29 from Vulcan Materials entrance road (mining area) to the north boundary of Florida Panther National Wildlife Refuge, Collier County</li> <li>– State managed road</li> <li>– Abutting landowners, Barron Collier and JB Ranch, may be willing to cooperate</li> <li>– Within the proposed Eastern Collier Multiple Species Habitat Conservation Plan</li> </ul>
<b>Map Location</b>	A
<b>Deaths</b>	<b>Red 9+ collisions</b>
<b>PD&amp;E Status</b>	PD&E underway with no defined date for completion, FPID 434490-1, SR 29 from I-75 to Oil Well Road (CR 858)
<b>Design/Construction Funding Snapshot</b>	No future funding beyond PD&E currently programmed as of 4/2020
<b>Solutions</b>	Unknown
<b>Costs</b>	Unknown
<b>Commitments</b>	None, PD&E study on-going
<b>Resources</b>	<a href="#">2006 Eastern Collier Wildlife Movement Study</a> <a href="#">2009 Florida Panther Technical Review Team Report</a> <a href="#">2018 FDOT Wildlife Crossings Guidelines</a>

# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"> <li>– CR846 east of town of Immokalee, Collier County</li> <li>– Collier County managed road</li> <li>– Abutting landowner, Barron Collier, may be willing to cooperate</li> <li>– Within the proposed Eastern Collier Multiple Species Habitat Conservation Plan</li> </ul>
<b>Map Location</b>	B
<b>Deaths</b>	<b>Red 9+ collisions</b>
<b>PD&amp;E Status</b>	None as of June 2020
<b>Solutions</b>	<ul style="list-style-type: none"> <li>– 2006 Eastern Collier County Wildlife Movement Study identified crossing locations</li> <li>– Easement protected habitat on both sides of road</li> <li>– “City Gate” wildlife crossing completed construction in November 2011. Ten panthers were killed within this hot spot prior to the crossing installation and four panthers have been killed by vehicle collisions since it was completed</li> </ul>
<b>Costs</b>	
<b>Commitments</b>	Collier County designing bridge replacements with terrestrial wildlife ledges (Bridge #s 030137, 030139, 030141), however vertical clearance only 2ft and aren’t suitable for large mammals
<b>Resources</b>	<a href="#">2006 Eastern Collier Wildlife Movement Study</a> <a href="#">2009 Florida Panther Technical Review Team Report</a>

# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"> <li>– US41, Turner River, Collier County</li> <li>– Within Big Cypress National Preserve</li> <li>– State managed road</li> </ul>
<b>Map Location</b>	C
<b>Deaths</b>	<b>Red 9+ collisions</b>
<b>PD&amp;E Status</b>	None
<b>Design/Construction Funding Snapshot</b>	As of 6/2020, no funding programmed
<b>Solutions</b>	<ul style="list-style-type: none"> <li>– Existing Nighttime Slow Speed Zone</li> <li>– Improvements recommended for existing Roadside Animal Detection System (RADS)</li> <li>– FDOT is researching alternatives to the RADS</li> </ul>
<b>FDOT Guideline Considerations</b>	Wildlife crossing design features (Page 4)
<b>Costs</b>	RADS improvements = \$250,000
<b>Commitments</b>	No funding identified for RADS improvements
<b>Resources</b>	<a href="#">2016 Report Assessing the Effectiveness and Reliability of the Roadside Animal Detection System on US Highway 41 near the Turner River in Collier County</a> <a href="#">2018 FDOT Wildlife Crossings Guidelines</a>

# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"> <li>– SR29 from CR858 (Oil Well Road) to south of Immokalee (CR 846) (Owl Hammock), Collier County</li> <li>– State managed road</li> <li>– Abutting landowners, King Ranch and Collier Enterprises, expressed willingness to cooperate with installation of wildlife crossing(s) at Owl Hammock Curve</li> <li>– Within the proposed Eastern Collier Habitat Multiple Species Conservation Plan</li> </ul>
<b>Map Location</b>	D
<b>Deaths</b>	<b>Orange 6-8 collisions</b>
<b>PD&amp;E Status</b>	PD&E on-going FPID 417540-1, SR 29 from Oil Well Road to SR 82
<b>Design/Construction Funding Snapshot</b>	<ul style="list-style-type: none"> <li>– As of 4/2020, FPID 417540-2, SR 29 from CR 858 to Sunniland Nursery Road funded for design in fiscal year 2024</li> <li>– 417540-3 and -4, SR 29 from Sunniland Nursery Road to CR 846 have started design (topo survey wrapping up)</li> </ul>
<b>Solutions</b>	<ul style="list-style-type: none"> <li>– Bridge replacement of SR 29 over Gator Creek (Owl Hammock) is being considered as part of the PD&amp;E</li> <li>– Fencing will also be required to ensure functionality of the crossing structure</li> </ul>
<b>Constraints</b>	PD&E approval, future FDOT phases lack ROW and construction funding
<b>Costs</b>	Two-lane bridge with shelves = \$2,000,000 Four-lane bridges with shelves = \$4,000,000
<b>Commitments</b>	None, PD&E pending
<b>Resources</b>	<a href="#">2006 Eastern Collier Wildlife Movement Study</a> <a href="#">2009 Florida Panther Technical Review Team Report</a> <a href="#">2018 FDOT Wildlife Crossings Guidelines</a>

# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"><li>– Keri Road from SR29 to CR833, Hendry County</li><li>– County managed road</li></ul>
<b>Map Location</b>	I
<b>Deaths</b>	Green 3-5 collisions
<b>PD&amp;E Status</b>	None
<b>Solutions</b>	<ul style="list-style-type: none"><li>– Existing Nighttime Slow Speed Zone</li><li>– Wildlife fencing and terrestrial crossings would be suitable in this location</li></ul>
<b>Costs</b>	Unknown
<b>Commitments</b>	None
<b>Resources</b>	<a href="#">Keri Road and Corkscrew Road Study</a>

# Project Status Sheet

<b>Road Segment</b>	<ul style="list-style-type: none"> <li>– SR82 from Hendry County Line to Gator Slough Lane (430848-1), Collier County</li> <li>– State managed road</li> </ul>
<b>Map Location</b>	O
<b>Deaths</b>	<b>Green 3-5 collisions</b>
<b>PD&amp;E Status</b>	Completed
<b>Solutions</b>	<ul style="list-style-type: none"> <li>– FDOT planning wildlife crossing features (430848-1) at Under Canal (west of Corkscrew Road) and Panther Creek (east of Corkscrew Road) bridge replacements. Currently funded in fiscal year 2024 (July 2023) with the possibility of being advanced to FY 2023</li> <li>– Cooperating landowners, Alico and King Ranch</li> <li>– Adjacent lands are part of the proposed Eastern Collier Multiple Species Habitat Conservation Plan, which intends to provide conservation lands adjacent to the proposed wildlife crossings</li> </ul>
<b>Costs</b>	Additional +/- \$800k needed for wildlife crossing features included in the project construction costs
<b>Commitments</b>	None
<b>Resources</b>	<a href="#">2009 Florida Panther Protection Program Technical Review Team Report</a>



# **Florida Panther Recovery Implementation Team Transportation SubTeam**

- Core Team Liaison: Elizabeth Fleming, Defenders of Wildlife
- SubTeam Chair: Amber Crooks, Conservancy of Southwest Florida
- Katasha Cornwell, Florida Department of Transportation
- Terry Gilbert, Florida Fish and Wildlife Conservation Commission
- Darrell Land, Florida Fish and Wildlife Conservation Commission
- Meredith Budd on behalf of Nancy Payton, Florida Wildlife Federation
- Gwen Pipkin, Florida Department of Transportation
- Don Scott, Lee County Metropolitan Planning Organization
- Brent Setchell, Florida Department of Transportation
- Dan Smith, University of Central Florida
- John Wrublik, U.S. Fish and Wildlife Service

<http://www.fws.gov/verobeach/FloridaPantherRITTransportation.html>